

REMARKS

Applicant respectfully requests reconsideration of the instant application on the basis of newly added Claims 8-9. Claims 1, 3, and 8 are the main claims and the remaining claims are directly or indirectly dependent upon those.

The Examiner has rejected the claims as being unpatentable over U.S. Patent No. 5,797,964 by Carlson *et al.* (*Carlson*). It is believed that Claims 1 to 9 are clearly distinguishable over this *Carlson* reference for the reasons that will be set forth.

The *Carlson* reference describes a cardiac monitor and its connected power supply.

Changes to the Specification

The specification has been changed to correct errors pointed out by the Examiner on page 2 of the subject Office Action.

35 U.S.C. § 102(b) Grounds for Rejection

The Examiner has principally rejected claims 1-2 as being anticipated by *Carlson*. It is believed that Claims 1 to 9 are clearly distinguishable over this *Carlson* reference for the reasons that will be set forth.

The *Carlson* patent shows a power supply suitable for use in a cardiac monitor.

Independent Claim 1 as originally presented recites the following elements, the most pertinent to this discussion being presented in bold type for the convenience of the Examiner:

1. A power supply for a gas generating system of the type including a barrier system permeable to selected charged particles flowing from a first side to a second side, the invention comprising:

a direct current (DC) power source in an electrical power circuit connected across the first and second sides of the permeable barrier system;

a plurality of resistive elements each having a fixed ohmic resistance, and each connectable in parallel electrical paths in the electrical power circuit;

resistor switch means for selectively connecting a desired resistive element in the electrical power circuit between the DC power source and barrier system; and

control means for controlling the connection of at least one resistive element in the electrical power circuit;

whereby the controller controllably affects a varying flow of charged particles across the permeable barrier.

[*Emphasis added*]

Since such "connect[ion] across the first and second sides of the permeable barrier system" of the Applicant's invention as claimed is not disclosed or suggested by *Carlson*, Applicant suggests that the claimed structure of the present invention is neither identical to or disclosed by the *Carlson* device. Therefore, *Carlson* cannot anticipate the present claimed invention.

Moreover, the allegedly prior art device lacks the functional characteristics of the claimed structure of the method claim in the present application. The cited *Carlson* devices does not have a power supply circuit "connect[ion] across the first and second sides of the permeable barrier system."

Finally, since 1902 the Supreme Court has held that a process patent is not anticipated by a prior apparatus capable of use in practicing the process where the apparatus was not so actually used. Carnegie Steel Co. V. Cambria Iron Co., 185 U.S. 403, 22 S. Ct. 698 (1902).

"A process patent, . . . , is not anticipated by a mechanism which might with slight alterations have been adapted to carry to that process, unless, at least, such use of it would have occurred to one whose duty it was to make practical use of the mechanism described. In other words, a process patent can only be anticipated by a prior device of like construction and capable of performing the same function; but it is otherwise with a process patent." 185 U.S. at 424.

Even if the *Carlson* patent incidentally showed a similar arrangement of parts, if that arrangement is neither claimed nor designed to perform the function of the present invention, the *Carlson* patent can not act as an anticipation.

35 U.S.C. § 103 Grounds for Rejection

The Examiner rejected Claims 3-7 under 35 U.S.C. § 103(a) as being unpatentable over the same *Carlson* patent. Applicant respectfully traverses these rejections for the reasons discussed below.

Carlson discloses the possible use of a power supply in a cardiac monitor, whose purpose is "to supply resistive heating power to a continuous cardiac monitoring catheter (col. 1, lines 21-24). Thus, the power supplies have different functions, and one of ordinary skill in the art would not have been motivated to replace the known gas generating power circuit in which the electrical current is switched on and off for varying the proportion of current on time based on a feedback signal with stepped voltage controller of the present invention.

By this structure Applicant is able to achieve the advantages which have hitherto not been able to be achieved through any adaption of the prior art. It is therefore believed to be clear that the particular structure of Applicant is extremely important and is not a mere matter of design. It should also be noted that the *Carlson* reference has been available since August 25, 1998. Between that time and the present, no-one except Applicant has constructed a stepped voltage

controller for use in a ceramic oxygen generating system without the disadvantages discussed above and which are clearly set forth on the first few pages of Applicant's specification. It is certainly believed to be pertinent that no-one has achieved or anticipated Applicant's structure despite the availability of the reference.

It is improper to use hindsight having read the Applicant's disclosure to "pick and choose" among isolated prior art references to disparage the claimed invention. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Even where an invention is, as a whole, fully disclosed by a combination of prior art elements, such elements cannot be combined to defeat a patent as obvious unless the art teaches or suggests the desirability of making the combination. ASC Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 221 U.S.P.Q. 929 (Fed. Cir. 1984). Thus, the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, U.S.P.Q.2d 1780 (Fed. Cir. 1992). Finally, it is the invention as a whole that is important. Focusing on the obviousness of substitutions and differences, instead of on the invention as a whole, is a legally improper way to simplify the often difficult determination of obviousness. Gillette Co. v. S. C Johnson & Son, Inc., 919 F. 2d 720, 16 U.S.P.Q. 1923 (Fed. Cir. 1990).

Independent Claim 3 recites the following elements, the most pertinent to this discussion being presented in bold type for the convenience of the Examiner:

3. An electro-chemical gas generating system for concentrating a selected gas from a feedstock fluid of the type including a ceramic membrane system permeable to selected charged particles flowing from a first side to a second side, the invention comprising:

a direct current (DC) power source in an electrical power circuit connected across the first and second sides of the ceramic membrane system;

a plurality of resistive elements each having a fixed ohmic resistance, and each connectable in parallel electrical paths in the electrical power circuit;

resistor switch means for selectively connecting a desired resistive element in the electrical power circuit between the DC power source and ceramic membrane system; and

control means for controlling the connection of at least one resistive element in the electrical power circuit;

whereby the controller controllably affects a varying flow of charged particles across the ceramic membrane. [Emphasis Added]

Carlson fails to teach or suggest these claim elements. *Carlson* discloses a power supply for a cardiac monitor. Col. 1, lines 21-24.

Dependent Claims 4-7 that depend from independent Claim 3 are also not made obvious by *Carlson* because they include the limitations of Claim 3 and add additional elements that further distinguish the art. Therefore, Applicant respectfully requests that Claims 3-7 be allowed.

Further, in order to establish a prima facie case of obviousness, the prior art teachings must be sufficient to suggest making the substitution or modification necessary to make the claimed invention to one of ordinary skill in the art, In re Lalo, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984), in the absence of applicant's own disclosure. See also, In re

Laskowski, 871 F.2d 115, 117, 10 USPQ2d 1397, 1398-99 (Fed. Cir. 1989) and Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985). The motivation to make a specific structure

“is not abstract, but practical, and is always related to the properties or uses one skilled in the art would expect the [structure] to have, if made.”

In re Gyurik, 596 F.2d 1012, 1018, 201 USPQ 552, 557 (CCPA 1979). See also Fromson v. Advance Offset Plate, Inc., 755 F.2d 1549, 1556, 225 USPQ 26, 31 (Fed. Cir. 1985) (“Critical inquiry is whether ‘there is something in the prior art as a whole to suggest the desirability, and, thus, the obviousness, of making the combination’”).

There must have been a reason apparent at the time of the invention was made to a person of ordinary skill in the art for applying the teachings at hand to effect the modification necessary to reach the claimed invention in the manner proposed or the use of the teaching as evidence of obviousness will entail prohibited hindsight. Graham v. John Deere of Kansas City, 383 U.S. 1, 148 USPQ 459 (1966), and In re Nomiya, 509 F.2d 566, 184 USPQ 607 (CCPA 1975).

Here there is lacking the requisite suggestion in these prior art disclosures that would have motivated the artisan to do what the Examiner has characterized as being an obvious combination.

New Claims

New Claims 8 and 9 are added to more fully claim the present invention. Claim 9 depends from Claim 8. Accordingly, Applicant respectfully submits that Claim 8 is patentable

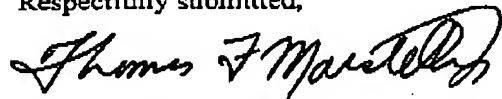
because it includes all the limitations of Claim 1 and adds additional elements that further distinguish the art.

Conclusion

Applicant has now made an earnest attempt to place this case in condition for allowance. In light of the amendments and remarks set forth above, Applicant respectfully requests reconsideration and allowance of Claims 1-9.

If there are matters which can be discussed by telephone to further the prosecution of this Application, Applicant invites the Examiner to call the attorney at the number listed below at the Examiner's convenience.

Respectfully submitted,



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ATTACHMENT A

LISTING OF CLAIMS WITH MARKINGS TO SHOW CHANGES MADE

Attachment A
Listing with Markings

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Claim(s)

1. (original) A power supply for a gas generating system of the type including a barrier system permeable to selected charged particles flowing from a first side to a second side, the invention comprising:

a direct current (DC) power source in an electrical power circuit connected across the first and second sides of the permeable barrier system;

a plurality of resistive elements each having a fixed ohmic resistance, and each connectable in parallel electrical paths in the electrical power circuit;

resistor switch means for selectively connecting a desired resistive element in the electrical power circuit between the DC power source and barrier system; and

control means for controlling the connection of at least one resistive element in the electrical power circuit;

whereby the controller controllably affects a varying flow of charged particles across the permeable barrier.

2. (original) The invention of claim 1 wherein the permeable barrier system is a component of a ceramic oxygen generating system (COGS).

3. (original) An electro-chemical gas generating system for concentrating a selected gas from a feedstock fluid of the type including a ceramic membrane system permeable to selected charged particles flowing from a first side to a second side, the invention comprising:

a direct current (DC) power source in an electrical power circuit connected across the first and second sides of the ceramic membrane system;

a plurality of resistive elements each having a fixed ohmic resistance, and each connectable in parallel electrical paths in the electrical power circuit;

resistor switch means for selectively connecting a desired resistive element in the electrical power circuit between the DC power source and ceramic membrane system; and

control means for controlling the connection of at least one resistive element in the electrical power circuit;

whereby the controller controllably affects a varying flow of charged particles across the ceramic membrane.

4. (original) The invention of claim 3 wherein the resistive element is a resistor.

5. (original) The invention of claim 3 wherein the resistive element generates waste energy in the form of heat.

6. (original) The invention of claim 5 wherein the waste energy is used to preheat the fluid used as a feedstock for the gas generating system.

7. (original) The invention of claim 3 wherein the resistive element is mounted within an oven chamber for the gas generating system.

8. (new) A power supply for a gas generating system comprising:

a barrier system permeable to selected charged particles flowing from a first side to a second side;

a direct current (DC) power source in an electrical power circuit connected across the first and second sides of the permeable barrier system;

a plurality of resistive elements each having a fixed ohmic resistance, and each connectable in parallel electrical paths in the electrical power circuit;

resistor switch means for selectively connecting a desired resistive element in the electrical power circuit between the DC power source and barrier system; and

control means for controlling the connection of at least one resistive element in the electrical power circuit;

whereby the controller controllably affects a varying flow of charged particles across the permeable barrier.

9. (new) The invention of claim 8 wherein the permeable barrier system is a component of a ceramic oxygen generating system (COGS).

ATTACHMENT B

AMENDMENTS TO THE SPECIFICATION

Attachment B
Amendments to the Specification
14

In the specification:

Please replace the paragraph [0004], with the following rewritten paragraph:

[0004] The core ceramic electrolyte in a ceramic oxygen generating system (COGS) requires a voltage source of a constant polarity (i.e. not AC). For a given electrolyte the rate of oxygen output is measured by the current, which depends on the applied voltage, as well as on other system parameters such as oxygen partial pressure of the inlet air and the electrolyte temperature. To adjust the oxygen output in a ceramic oxygen generating system, adjustment of one of the aforementioned parameters [[in]] is required. Of these parameters, adjusting the applied voltage is generally preferred because the response time is nearly instantaneous (<0.01 sec).

Please replace the paragraph [0019], with the following rewritten paragraph:

[0019] Figure 3 illustrates a schematic of a portion of a known oxygen generating system (70) utilizing an electrochemical-oxygen generator in the form of a modular ceramic oxygen generator. This schematic depicts a power supply and controller (72), such as that of the present invention, which power supply and controller (72) supplies electrical power to an oven heater (74) to raise the temperature within the operating range of an oxygen-generating module assembly (76). The oxygen-generating module assembly (76) can include one or more oxygen-generating modules such as those disclosed in U.S. Pat. No. 5,871,624 and U.S. Pat. No. 5,985,113.